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09/898,286	07/03/2001	Geoffrey Donald Tremain	1821-01100	2215

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EXAMINER

SHIFERAW, ELENI A

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 12/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/898,286

Applicant(s)

TREMAIN, GEOFFREY DONALD

Examiner

Eleni A Shiferaw

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/24/04, 10/5/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-55 are presented for examination.

Claim Objections

2. Claim 53 is objected to because of the following informalities: Applicant is claiming claim 53 as it depends on it self (claim 53 is dependent on claim 53). Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 10-11, 13, 18-22, 28-29, 31, 36-39, 45-46, 48, and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bugnion et al. (Bugnion, US Patent Number 6,075,938) in view of Derks (US Patent Number 6,810,033 B2).

As per claim 1, and 20, Bugnion teaches apparatus or a method providing one or more computer services for a plurality of customers (Bugnion Col. 6 lines 6-35), the apparatus comprising a real computer on which is set up of each of said customers at least one virtual machine for each of said customers (Bugnion Col. 5 lines 1-13),

Bugnion does not explicitly teach set up request of each of said customers, and said at least one virtual machine for each of said customers having a specification specified by the respective customer,

However, Derks discloses set up at the request of each of said customers at least one virtual machine for each of said customers (Derks Col. 5 lines 16-55, and col. 3 lines 7-12), said at least one virtual machine for each of said customers having a specification specified by the respective customer (Derks Col. 5 lines 16-55, and col. 3 lines 7-12),

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Derks with in the system of Bugnion because it would allow to identify the gateway with the internet address carried by the set up request message and transmit data over the connection in order to address one out of more terminals connected to the remote gateway and set up a virtual connection (Derks Col. 5 lines 16-55).

As per claim 37, Bugnion teaches a method of operating a real computer on behalf of plural customers, the method comprising the step of:

operating plural virtual machines on the real computer (Bugnion Col. 6 lines 6-35),

Bugnion does not explicitly teach having a specification specified by a respective one of the customers in accordance with a computer service to be provided by the virtual machine on behalf of that customer,

However Derks discloses each of said plural virtual machines having a specification specified by a respective one of the customers in accordance with a computer service to be

provided by the virtual machine on behalf of that customer (Derks Col. 5 lines 16-55, and col. 3 lines 7-12),

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Derks with in the system of Bugnion because it would allow to identify the gateway with the internet address carried by the set up request message and transmit data over the connection in order to address one out of more terminals connected to the remote gateway and set up a virtual connection (Derks Col. 5 lines 16-55).

As per claim 54, Bugnion teaches a method of providing for a plurality of customers one or more computer services selected from: file, data and archiving services; applications hosting services; database hosting services; data warehouse services; knowledge management hosting services; digital media production services; "intellectual property" and streaming media services; simple web hosting services; complex e-commerce web hosting services; high performance computation services; electronic messaging and conferencing services; and, learning neuro-computer services (Bugnion Abstract); the method comprising the steps of:

setting up on a real computer of each of said customers at least one virtual machine for each of said customers (Derks Col. 5 lines 16-55, and col. 3 lines 7-12),

Bugnion does not explicitly teach set up request of each of said customers, said at least one virtual machine for each of said customers having a specification determined in accordance with the computer service or services requested by said customer,

However, Derks discloses setting up on a real computer at the request of each of said customers at least one virtual machine for each of said customers (Derks Col. 5 lines 16-55, and

col. 3 lines 7-12), said at least one virtual machine for each of said customers having a specification determined in accordance with the computer service or services requested by said customer (Derks Col. 5 lines 16-55, and col. 3 lines 7-12),

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Derks with in the system of Bugnion because it would allow to identify the gateway with the internet address carried by the set up request message and transmit data over the connection in order to address one out of more terminals connected to the remote gateway and set up a virtual connection (Derks Col. 5 lines 16-55).

As per claims 2, 21, and 38, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches apparatus or method, wherein plural virtual machines are set up within the real computer for at least one of said customers (Bugnion Col. 6 lines 6-35, and col. 5 lines 1-13).

As per claims 3, 22, and 39, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches apparatus or a method, wherein the or each virtual machine for at least one of said customers is connected to a virtual network set up for said at least one customer within the real computer (Bugnion Col. 15 lines 54-col. 16 lines 12).

As per claims 10, 28, and 45, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches apparatus or a method, comprising a plurality of real data storage devices and at least one virtual storage subsystem that is configured to allow said real data storage devices to emulate one or more virtual storage devices (Bugnion Col. 5 lines 1-28, and col. 7 lines 38-48).

As per claims 11, 29, and 46, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches apparatus or a method, wherein the at least one virtual storage subsystem is configured to emulate at least one respective virtual storage device for each customer (Bugnion Col. 5 lines 1-28, and col. 7 lines 38-48).

As per claims 13, 31, and 48, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches apparatus or a method, wherein the apparatus is configurable to provide at least one of the services selected from: file, data and archiving services; applications hosting services; database hosting services; data warehouse services; knowledge management hosting services; digital media production services; "intellectual property" and streaming media services; simple web hosting services; complex e-commerce web hosting services; high performance computation services; electronic messaging and conferencing services; and, learning neuro- computer services (Bugnion Abstract).

As per claim 18, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches apparatus, wherein the real computer comprises plural physical computers (Bugnion Col. 6 lines 6-35).

As per claim 19, Bugnion and Derks teach all the subject matter as described above. In addition Bugnion teaches in combination, a first apparatus and a second apparatus that is substantially identical to said first apparatus, the first and second apparatus being connected by a communications channel so that the second apparatus can provide for redundancy of the first

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apparatus thereby to provide for disaster recovery if the first apparatus fails (Bugnion Col. 5 lines 40-47).

As per claims 36, 53, and 55, Bugnion and Derks teach all the subject matter as described above.

In addition Bugnion teaches a method, comprising the step of moving said at least one virtual machine from a first real computer to a second real computer (Bugnion Col. 4 lines 51-67).

5. Claims 4-9, 12, 14-17, 23-27, 30, 32-35, 40-44, 47, and 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bugnion et al. (Bugnion, US Patent Number 6,075,938) in view of Derks (US Patent Number 6,810,033 B2), and in further view of Bowman-Amuah (Bowman, US Patent Number 6,697,824 B1).

As per claims 4, 23, and 40, Bugnion and Derks teach all the subject matter as described above.

Bugnion and Derks do not explicitly teach apparatus or a method, comprising a virtual intrusion detection device for detecting an attack on the virtual network.

However Bowman teaches a virtual intrusion detection device for detecting an attack on the virtual network (Bowman Col. 75 lines 63-col. 76 lines 37).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Bowman within the combination system of Bugnion and Derks because it would allow to audit services and identify vulnerabilities (Bowman Col. 75 lines 63-col. 76 lines 37).

As per claims 5, 24, and 41, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus or a method, wherein at least one virtual machine is connected to a virtual firewall (Bowman Fig. 36 Number 3604) that is connectable to an external network to which customers and/or other users can connect such that access to said at least one virtual machine by a customer or other user via a said external network can only take place through a virtual firewall (Bowman Fig. 36, and col. 75 lines 63-col. 76 lines 37).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Bowman within the combination system of Bugnion and Derks because it would allow to control access at entry points into both the network and the customer location, and restrict access to more sensitive servers on the internal network, web pages, files, and directories (Bowman Col. 76 lines 19-36).

As per claims 6, 25, and 42, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus or a method, wherein the or each virtual machine for a particular customer is connected to a virtual firewall that is dedicated to that customer's virtual machine or machines, each virtual firewall being connectable to an external network to which each of said customers and/or other users can connect such that access to a virtual machine by a customer or other user via a said external network can only take place through a virtual firewall provided for that virtual machine or machines (Bowman Fig. 36, and col. 75 lines 63-col. 76 lines 37). The rationale for combining are the same as claim 5 above.

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As per claims 7, 26, and 43, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bugnion teaches setup within the real computer (Bugnion Col. 5 lines 1-13), and

Bowman teaches apparatus or a method, wherein each virtual firewall is set up within the real computer (Bowman Col. 75 lines 63-col. 76 lines 5), the or each virtual machine for each customer being connected to a first port of the virtual firewall (Bowman Fig. 36 No. 3604) that is dedicated to that customer's virtual machine or machines, each virtual firewall having a second port connected to a virtual network (Bowman Fig. 36 No. 3604) that is set up within the real computer and that is connectable to an external network (Bowman Col. 75 lines 63-col. 76 lines 37, and Fig. 36). The rationale for combining are the same as claim 5 above.

As per claims 8, 27, and 44, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus or a method, wherein the second port of each virtual firewall (Bowman Fig. 36 No. 3604) is connected to the same virtual network that is set up within the real computer and that is connectable to an external network (Bowman Fig. 36 No. 3604, and Internet Dial-up). The rationale for combining are the same as claim 5 above.

As per claims 9, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus, wherein the or at least one of the virtual firewalls is implemented by a virtual machine on the real computer, said virtual firewall virtual machine running firewall software (Bowman Col. 75 lines 63-col. 76 lines 37). The rationale for combining are the same as claim 5 above.

As per claims 12, 30, 47, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus or a method, comprising a detection device for detecting evidence of malicious software or hostile attack signatures on the at least one virtual storage subsystem (Bowman Col. 75 lines 63-col. 76 lines 37). The rationale for combining are the same as claim 4 above.

As per claims 14, 32, and 49, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus or a method, comprising virtual private network software to provide an encrypted communication channel for communication between at least some of said virtual machines (Bowman Col. 68 lines 7-18).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teachings of Bowman within the combination system of Bugnion and Derks because it would allow to prevent unauthorized access to the data during transmission (Bowman Col. 68 lines 7-18).

As per claims 15, 33, and 50, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus or a method comprising virtual private network software to provide an encrypted communication channel for communication between at least one virtual machine and an external computer (Bowman Col. 68 lines 7-18, and col. 75 lines 63-col. 76 lines 37). The rationale for combining are the same as claim 14 above.

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As per claims 16, 34, and 51, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition Bowman teaches apparatus, comprising virtual private network software to provide an encrypted communication channel for communication between a first virtual network and a second virtual network (Bowman Col. 68 lines 7-18, Fig. 36 No. 3602, No. 3604VPH and col. 75 lines 63-col. 76 lines 37). The rationale for combining are the same as claim 14 above.

As per claims 17, 35, and 52, Bugnion, Derks, and Bowman teach all the subject matter as described above. In addition teaches apparatus, comprising virtual private network software to provide an encrypted communication channel for communication between a virtual network and external computer (Bowman Col. 68 lines 7-18, and Fig. 36 No. 3602, No. 3604VPH, and Internet Dial-Up). The rationale for combining are the same as claim 14 above.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eleni A Shiferaw whose telephone number is 571-272-3867. The examiner can normally be reached on Mon-Fri 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eleni Shiferaw
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